3) PCT/EP00/10145

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 : A61N 1/40, 2/04, 5/02

A1

(11) International Publication Number: WO 95/03850

(43) International Publication Date: 9 February 1995 (09.02.95)

(21) International Application Number: PCT/HU93/00043

(22) International Filing Date: 27 July 1993 (27.07.93)

(81) Designated States: AU, CA, JP, KZ, RU, UA, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

(71)(72) Applicants and Inventors: VAISER, Leonid, Vladimirovich [UZ/HU]; Angeli út 12, H-1225 Budapest (HU). KOKORIN, Boris, Ivanovich [RU/HU]; Angeli út 12, H-1225 Budapest (HU).

(74) Agent: S.B.G. & K. PATENT AND LAW OFFICE; P.O. Box 360, H-1369 Budapest (HU).

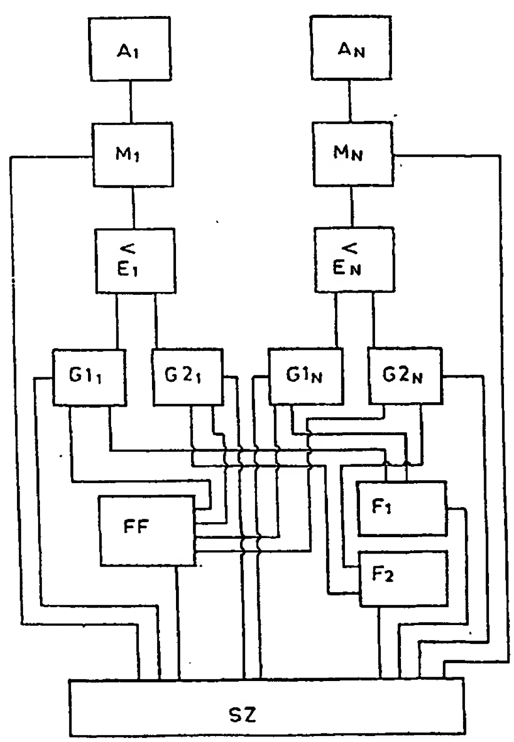
Published

With international search report.

(54) Title: A METHOD AND DEVICE FOR MEASURING THE ELECTROMAGNETIC FIELD GENERATED BY LIVING ORGANISMS AND NONLIVING BODIES, FOR GENERATING SUCH A FIELD, AND ALSO FOR PRODUCING AN EFFECT ON (TREATMENT OF) BODIES WITH THE HELP OF SUCH A FIELD

(57) Abstract

The present invention relates to a method and a device for measuring the electromagnetic field generated by living organisms and nonliving bodies, for generating such a field, and also producing an effect on (treatment of) bodies with the help of such a field. According to the invention the electromagnetic field generated by living organisms or nonliving bodies can be measured by creation of an electromagnetic field with a frequency corresponding to the internal frequency or external resonance frequency of the body under test, wherein the electric and magnetic components of the field are created separately from one another with the help of two different systems, whereby the angle between the electric and magnetic field vectors of the electromagnetic field is changed smoothly within a set range (in this particular case within the range from zero to 360 degrees), wherein the waves reflected from the examined body are picked up with the help of a specially designed receiver system.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria
AU	Australia
BB	Barbados
BE	Belgium
BF	Burkina Faso
BG	Bulgaria
BJ	Benin
BR	Brazil
BY	Belarus
CA	Canada
CF	Central African Republic
CG	Congo
CH	Switzerland
CI	Côte d'Ivoire
CM	Cameroon
CN	China
CS	Czechoslovakia
CZ	Czech Republic
DE	Germany
DK	Denmark
ES	Spain
FI	Finland
FR	France
GA	Gabon
GB	United Kingdom
GE	Georgia
GN	Guinea
GR	Greece
HU	Hungary
IE	Ireland
IT	Italy
JP	Japan
KE	Kenya
KG	Kyrgystan
KP	Democratic People's Republic of Korea
KR	Republic of Korea
KZ	Kazakhstan
LI	Liechtenstein
LK	Sri Lanka
LU	Luxembourg
LV	Latvia
MC	Monaco
MD	Republic of Moldova
MG	Madagascar
ML	Mali
MN	Mongolia
MR	Mauritania
MW	Malawi
NE	Niger
NL	Netherlands
NO	Norway
NZ	New Zealand
PL	Poland
PT	Portugal
RO	Romania
RU	Russian Federation
SD	Sudan
SE	Sweden
SI	Slovenia
SK	Slovakia
SN	Senegal
TD	Chad
TG	Togo
TJ	Tajikistan
TT	Trinidad and Tobago
UA	Ukraine
US	United States of America
UZ	Uzbekistan
VN	Viet Nam

A METHOD AND DEVICE FOR MEASURING THE ELECTROMAGNETIC FIELD GENERATED BY LIVING ORGANISMS AND NONLIVING BODIES, FOR GENERATING SUCH A FIELD, AND ALSO FOR PRODUCING AN EFFECT ON (TREATMENT OF) BODIES WITH THE HELP OF SUCH A FIELD

Technical Field of the Invention

The invention relates to a method and a device for measuring the electromagnetic field generated by living organisms and nonliving bodies, for generating such a field, and also for producing an effect on (treatment of) bodies with the help of such a field.

Background Art of the Invention

The part of the radiating device which excites the magnetic field is capable of producing an effect on liquids (water, for example). Devices of this kind are described in HU-PS 187.898, HU-PS 195.939 and HU-PS 205.042. In addition, known in the art is the effect of magnetic fields on living organisms. Also known in the art are various solutions with regard to devices producing a curative effect with the help of an electromagnetic field.

Applications DE-OS 26 34 628, DE-OS 23 04 500 and DE-OS 23 06 922 describes solutions which make it possible to heat tumorous cells with the help of electromagnetic waves and thus destroy them. In the case of such a solution an unfavourable effect may be produced: the point is that neighbouring healthy cells may be damaged, and painful burns may appear on the skin.

Application DE-OS 27 48 780 describes a device for producing a specific effect on bone growth. In the solution reference is made to two different code signals which stimulate bone growth. Since the solution is applicable only to bones, a different solution is required for broader applications. Application US-PS 3 789 832 describes a method which assures

diagnosis of cancer at an early stage. This is assured by the establishment (detection) of the frequencies radiated by cells, and also by filtering the frequencies characteristic of morbid cells. Proceeding from this, application DE-OS 24 23 399 proposes a method for treatment of tumorous cells, whereby the electromagnetic waves radiated by cancerous cells are used for irradiation of these cells to control the rate of growth of morbid cells. This solution produces an effect not only on tumorous cells, it produces a harmful effect on healthy cells whose resonance frequency is brought closer to that of morbid cells. As a result, the growth of healthy cells may become uncontrollable.

Application EP-OS 0 011 019 describes an electromagnetic radiation device in which a high frequency oscillator radiating a resonance frequency of 27.12 megacycles per second is connected to an aerial through an amplifier, through a time-signal generator connected to the latter and a power amplifier. The frequency of the time-signal generator modulating the signal of the high frequency oscillator varies from 50 to 100 cycles per second, the modulating pulse width being 100 milliseconds. Since such a device was not adequately efficient Application EP-OS 0 136 530 proposes a solution in which the stage (series) frequency of the high frequency oscillator is in the band of 100-200 megacycles per second, and its high frequency signal is modulated by a low frequency signal of from one to 1000 cycles per second. The modulated signal is passed on to the time-signal generator which turns it into a broken, intermittent, signal characterised by a frequency of from 0.5 to 40 cycles per second. The signal is then delivered through the final amplifier to the sending (transmitting) aerial.

In one of its versions the invention is fitted with a further low frequency stage which controls the coil generating the electromagnetic field. This low frequency stage may be set between one and 1000 cycles per second or it may function

regularly at a frequency between seven and 12 cycles per second. The description claims that this equipment proved to be effective in treatment of chronic asthma for instance. One of the advantages of the invention is that it assures a therapeutic effect with the help of radiation of very low power (mW). This means that there is no danger of skin burns, overheating of any internal organ or tissue, or of inducing other sicknesses resulting from radiation. The equipment makes it possible to vary the radiation frequencies within a wide band. At the same time this equipment is not capable of establishing the frequencies characteristic of tissues or organs: the description does not mention this. Judging by the description and the claims the equipment is used only for producing an effect on (treatment of) living organisms. It produces no effect on nonliving bodies.

In working on our invention we wanted our device to produce an effect both on living organisms and nonliving bodies, to be capable of producing an effect not only with the help of frequencies and varying power, but also with the help of other radiation parameters, to be capable of establishing effective therapeutic frequencies and other radiation characteristics of bodies, to be capable of producing a selective effect at a considerable distance, to be capable of identifying with the help of radiation a body and of establishing its condition and material components.

Disclosure of the Invention

According to the present invention these objects are achieved with the help of separate electric and magnetic components of an electromagnetic field generated by two different systems which smoothly vary the angle between the electric and magnetic vectors of the electromagnetic field within the set range (in this particular case from zero to 360 degrees).

The device receives the waves reflected from the examined body (object). These waves are picked up by a specially designed receiver system. The signal at the output of the receiver system is being constantly recorded. When the reflected signal is picked up, the parameters, which are characteristic of the examined object, are fed into the data bank of the system radiating the electromagnetic field.

To determine the composition of an unknown body with at least one known component it is placed in the electromagnetic field of the radiating system. When the system picks up at least one reflected signal, the parameters which characterise the examined object and which correspond to the electromagnetic field of the radiating system are recorded. They are then compared to the measured parameters of known objects (materials) to determine the material components of the examined object.

To determine the parameters (state, condition) of an unknown object (body) it is placed in the electromagnetic field of the radiating system. When the system picks up a reflected signal, the parameters, which characterise the examined object (material) and which correspond to the electromagnetic field of the radiating system, are recorded. They are then compared to the measured parameters of known objects (materials) to establish the composition of the examined object. To achieve the purpose the electromagnetic field is generated by two periodic signals characterised by different frequencies. In this field the high frequency periodic signal is within the band of from one kilocycle per second to 1000 gigacycles per second. It is modulated by a low frequency signal within a band of from 0.001 to 1000 cycles per second. In the case of long range action the object - a living organism or nonliving body - may be located at a distance of 30 or more kilometres from the system radiating the field. The imprints (copies) of the electromagnetic fields typical of the given object and its geographical location (ground) are placed between Helmholtz

coils, which generate an auxiliary electromagnetic field parallel to the (Earth's) geomagnetic field. It should be mentioned that the auxiliary electromagnetic field, which is parallel to the geomagnetic field "aimed " at the electromagnetic field of the object in a way to assure that the angle between the electric and magnetic vectors of the electromagnetic field acting on the object coincides with the characteristic vectorial angle of the object or the vectorial angle of the material acting on the object.

The equipment effecting the method comprises two different radiation systems. Each system separately produces the electric and magnetic components of the field. The transmitter system comprises sending (transmitting) aerials and control circuits connected thereto. The receiver system comprises receiving aerials, an amplifier connected thereto, and a recording unit connected to the output of the amplifier. It should be mentioned that the transmitter system has at least eight aerials or their number is a multiple of four. The receiver system has at least four aerials or their number is a multiple of four. The number of the receiver system aerials and that of the transmitter system aerials forms a ratio of at least one to two. The three-dimensional electric radiation aerials are of the supertoroidal type of the first or higher, but invariably of an odd, order. The magnetic field radiators are of the supertoroidal type of the second or higher, but invariably of an even, order.

Further is a description and drawings of one of the efficient models (designs) of the invention.

Brief Description of the Drawings

Fig. 1 shows a design of a supertoroidal aerial of the invention. Fig. 2 shows the arrangement of the aerial system made up of supertoroids.
Fig. 3 shows the arrangement of the receiving aerial system.

Fig. 4 shows the control system circuit unit of the serial system.

Fig. 5 shows the circuits of the Helmholtz coils in one of the expedient models of the radiating equipment.

Description of the preferred Embodiments

Supertoroid AII shown in Fig. 1 is one of the main transmitting aerials essential for effecting the method proposed in the invention. A supertoroid is a toroid with a solenoid wound around it or a solenoid with a solenoid wound around it. The simplest element is the solenoid, a so-called supertoroidal aerial of the first order. This means that a supertoroid of the first order is a coil or a toroid comprising elementary solenoids serving as conductors. From the standpoint of the supertoroid a simple, regular, toroid is a coil with a single turn. A supertoroid of the second order is a coil with a very long supertoroid of the first order wound around it to serve as a conductor. A supertoroid of the third order is a coil with a similar winding consisting of a very long supertoroid of the second order.

In practice it is possible to make supertoroids of the XII or even the XV order.

In actual fact a supertoroid generates, along the axis of the toroid, either an electric or a magnetic field. Toroids of the first, third, and higher odd orders produce an electric field, and toroids of the second, fourth, and higher even orders a magnetic field.

Depending on the type of aerial it is possible to set the angle between the magnetic (H) and electric (E) vectors of the field. The higher the order of the supertoroid forming the aerials the greater their ability to distinguish one component from another. This means that they can set an angle between the vectors of the field, which differs from the common angle of

90 degrees. This is evidenced by Table 1 below.

Table 1

Angle ratios between vectors H and E, and the power of radiation in per cent

Nos.	Type of aerial	(E-H)/(E-H)	Angle range
1.	2.	3.	4.
1.	rod aerial	0.5	13 - 25
2.	coil aerial	0.4	31 - 39
3.	supertoroidal aerials of the first-second orders	12.0	6 - 18
4.	supertoroidal aerials of the third-fourth orders	18.0	4 - 13
5.	supertoroidal aerials of the fifth-sixth orders	32.0	2 - 8
6.	supertoroidal aerials of the seventh-eighth orders	64.0	30 - 4
7.	supertoroidal aerials of the XVI-XVII orders	96.0	15 - 10

Column 3 of the Table expresses in per cent the capability of the given transmitting aerial to adjust (set) either vector E or vector H. Column 4 shows the angle range between E and H. The efficiency of a supertoroidal aerial is considered to be adequate if the rate of radiation expressed in per cent in Column 3 exceeds 50 (supertoroidal aerials of the seventh and higher orders).

Fig. 2 shows a system of supertoroidal transmitting aerials.

Each row of aerials is mounted on the vertices of squares. The aerials mounted opposite each other are supertoroids generating only an electric or only a magnetic field. The aerials mounted side by side are supertoroids which are capable of generating either an electric or a magnetic field. A row comprises four aerials. The distance between one row and another is determined by the distance between the elements of the aerials. In successive rows the distance between the elements is also definite. The distances are determined as follows:

If the length of a side of the square in the first row is 1 - 2 = 2 - 3 = 3 - 4 = 4 - 1 = "a", the length in the second row will be $a_j = 1.44\ a_j - 1$. In the next rows of aerials arranged vertically under one another the distance between the elements of the aerials arranged on the vertical rib of the aerial is determined as follows:

1 - 5 = A1 - A2 = b = 0.84a
5 - 9 = A2 - A3 = 1.67 b
9 -13 = A3 - A4 = 1.59 b
13-17 = A4 - A5 = 1.54 b
17-21 = A5 - A6 = 1.49 b
21-25 = A6 -A7 = 1.44 b
25-29 = A7 - A8 = 1.39 b

Fig. 3 shows the design of a receiving aerial. The dimensions of the receiving aerial are determined by the transmitting aerial. The side of the square is determined by row one A = 5.6 a, whereas the other dimensions are calculated on the basis of the following proportions: B = 1.67 A, where B is the length of the side between the rows of aerials, and C = 1.44 A, where C is the length of the side of the second row of aerials.

Two types of radiation are employed, whereby the electric component is separated from the magnetic component. The

transmitter system and the receiver system also form a separate system. The transmitter system has at least eight aerials or their number is a multiple of four. The receiver system has at least four aerials or their number is a multiple of four. The number of aerials in the receiver system and that in the transmitter system form a ration of at least one to two.

The number of aerials in the transmitter system may, in principle, be limited to two or their number should be a multiple of two. However, it is more expedient to have at least four aerials in the transmitter system. The three-dimensional arrangement of aerials 1.32 is shown in Fig. 2. There is a supertoroidal aerial at every point in the square array. The three-dimensional electric radiation aerials are supertoroids of the first or higher, but invariably odd, order, whereas the magnetic field radiators are supertoroidal aerials of the second or higher, but invariably even, order. By adjusting the phases with the help of the transmitting aerial it is possible to form the necessary angle between vector E and vector H (which will depend on the number of aerials). Table 2 below shows how phases may be shifted with the help of a transmitting aerial depending on the rows of aerials and their elements in each row.

Table 2

Phase shift made with the help of the transmitting aerial system

	phase shift					phase shift			
row	in N aerial row				row	in N aerial row			
	1	2	3	4		1	2	3	4
I	0	8	30	72	V	30	32	33	35
II	144	288	45	90	VI	22	24	27	29
III	75	135	144	288	VII	11	10	15	20
IV	100	101	144	288	VIII	5	6	3	-

The transmitter system comprises transmitting aerials and control circuits connected to them. The receiver system comprises receiving aerials, an amplifier connected to them, and a recording unit connected to the output of the amplifier. A systems control unit is connected both to the receiver system and the transmitter system.

Fig. 3 shows the control circuit unit. A high and a low frequency periodic signal generators are connected to each aerial in the transmitter system. The signal outputs of the high and low frequency generators are mutually synchronised both with respect to the phase and length of the signal, which is governed by the pulse chopper. Twinned low and high frequency generators connected to separate aerials are linked to a frequency synchroniser and phase adjustment means, such as a phase shifter. The generators and phase adjustment means (phase shifter) input are connected to the output of the central control unit, to the control computer.

Fig. 4 gives a diagram of a long-range action model of the invention.

To produce an effect on an object at distances of 30 or more kilometres an additional aerial is connected to the device generating the active field. The aerial comprises a supertoroid (L3) of the second order, a Helmholtz coil (L1) connected in parallel to the turns of the supertoroid. The Helmholtz coil is connected to the adjustable secondary side of a mains-operated transformer. Then another Helmholtz coil (L2), which is connected in parallel to a condenser (C), is coupled to the first Helmholtz coil (L1) by means of mutual inductance. A control circuit comprising two high and low frequency signal generators is connected to this oscillatory circuit. The latter is also connected to the generator of the modulator.

Both Helmholtz coils (L1 and L2) are arranged close to one another on the same axis. Their axis is parallel to the

geomagnetic lines. Imprints (copies) of the electromagnetic fields characteristic of the exposed object and its geographic location (ground) are placed between the coils inducing an auxiliary magnetic field parallel to that of the geomagnetic field.

Imprints of the electromagnetic fields characteristic of the geographical location (ground) and the exposed object located there are transferred in frozen form on glycerine, paraffin, tar or mixtures thereof. The use of paraffin, for instance, increases the long-range effect. To improve the performance of the device it is necessary to add to 10 units of mass of paraffin one unit of mass of metal powder (composition given in units of mass):

one unit of mass of silver,
two units of mass of copper,
three units of mass of iron,
four units of mass of aluminium, and
four-nine units of mass of tin.

The above device functions as follows:
Two different radiating systems separately create with the help of supertoroidal aerials the electric and magnetic components of a field. The angle between the electric and magnetic vectors of the electromagnetic field is smoothly adjusted within the range of from zero to 360 degrees.

While the device is in operation, the signal at the output of the receiver system is constantly recorded. When the reflected signal is picked up the parameters distinctive of the examined object are fed into the data bank of the system creating the electromagnetic field.

The electromagnetic field is created by two periodic signals of different frequencies. The high frequency periodic signal is within the band of from one kilocycle per second to 1000

gigacycles per second. It is modulated by a low frequency periodic signal of from 0.001 to 100 cycles per second.

Tables 3 and 4 give some of the typical frequencies and angle ranges of various living creatures.
Both periodic signals are sinusoidal. The angle between the electric and magnetic vectors of the field is set by changing the difference in the phases of the modulated signals fed to each aerial.

The efficiency improves, if the low frequency sinusoidal signal, which modulates the high frequency signal creating the electromagnetic field, is broken off (discontinued) after a certain part of the wave has passed and formed a definite phase angle.

To produce this effect the transmitter system is controlled by a computer. In keeping with the computer's control signals generators G1 yield a high frequency signal and generators G2 a low frequency signal. The generators are synchronised by a frequency synchroniser controlled by a computer and a phase adjustment means - an effective phase shifter. The phases of the generators are adjusted by a phase shifter connected to a computer. The pulses are interrupted by a computer-controlled phase chopper.

The high and low frequencies of examined objects should be selected on the basis of the external F and internal f resonance frequencies. Table 4 gives the bands of the external and internal frequencies of some living creatures (and other objects).

Table 3

Ranges of E - H angles distinctive of the immune systems of examined living organisms and also of other objects; ranges of E - H angles formed by different types of aerials

Object	Angle	System	Angle	Aerials	Angle
1. Human being	5 - 45	immune system	17 - 24	magnetic	13 - 90
2. Mammals	18 - 25	immune system	25 - 32	coil	30 - 90
3. Amphibians	15 - 65	immune system	33 - 39	supertoroid of the I and II orders	6-18
4. Reptiles	10 - 35	immune system	18 - 25	supertoroid of the VI and VIII orders	1 - 6
5. Minerals	5 - 18			supertoroid of the XV-XVI orders	0.3-2

Table 4

External and internal frequencies of certain living creatures (and other objects)

Object	f	F	Immune system	F
1. Human being	2 - 4 gc	0.9 - 16 cps	400 Mc - 2 gc	0.5-4cps
2. Mammals	1 - 3 gc	0.7 - 8 cps	100 Mc - 1 gc	0.3
3. Reptiles	8 -1.5 gc	0.3 - 4 cps	40 Mc - 100 Mc	0.1
4. Plants	400 - 1 gc	0.1 - 2 cps	3 Mc - 30 Mc	0.09-22cps
5. Minerals			200-400 Mc	0.01-07cps

The experience acquired shows that to produce a stimulating

effect the low frequency sinusoidal signal should be dampened (eliminated) as soon as it forms a phase angle of 0.33*T. To produce an inhibiting effect the low frequency sinusoidal signal should be dampened as soon as it forms a phase angle of 0.25*T.

The invented method also helps determine the characteristic parameters of microscopic objects. In this case the angle between the electric and magnetic vectors of the magnetic field induced by electromagnetic field is maintained constantly identical to the internal frequency of the body, which is determined with the help of the known method. If the difference between the angles of the field changes, a series of measurements should be made with the help of a low frequency signal which is dampened (eliminated), when one phase angle is equal to 0.25 *T and the other to 0.33*T. It should be mentioned that the magnitude of the vectorial angle is considered to be characteristic of the examined object, if the reflected feedback signal is the greatest, when the parameters of the field of the said coincide with those of the field created by the radiating generators.

in examining an object whose content is unknown, which has at least one known component the following procedure should be adopted:

A body whose content is unknown should be placed in the electromagnetic field of the radiating system. The reflected signal should be recorded as soon as it is picked up by the system. The parameters characteristic of the examined object (material) and those of the electromagnetic field set up by the radiating system are compared to the already determined parameters of known objects (materials). A comparison of these parameters will help establish the material components of the object. This method may also be used for determining the unknown conditions (state) of known objects. In this case it is necessary to place in the electromagnetic field the object

(body) whose condition is unknown and to record the reflected signal as soon as the reflected feedback signal is picked up. The parameters characteristic of the examined material and those of the electromagnetic field induced by the radiating system should be compared to the already measured parameters of known conditions (states). The comparison will help establish the condition (state) of the examined object (body).

To produce a long-range effect on an object (body) it is essential to create an electromagnetic field whose frequency would correspond to the object's internal resonance frequency f and to its external resonance frequency F. The object (body) should be placed at a distance of 30 or more kilometres from the system radiating the field. The angle between the electric and magnetic components of the electromagnetic field should be equal to the vectorial angle of the examined body.

If the exposed object is at a distance of 30 or more kilometres from the radiating system an imprint (copy) of its distinctive electromagnetic field and also of its geographic location (ground) should be placed between the turns creating the auxiliary electromagnetic field parallel to the geomagnetic field. The auxiliary electromagnetic field parallel to the geomagnetic field is "superimposed" on the object's electromagnetic field. The angle between the electric and magnetic vectors of the actuating field should be equal to the object's characteristic vectorial angle or to the vectorial angle of the material producing an effect on the object.

CLAIMS

1. Method for measuring the electromagnetic field generated by living organisms and nonliving bodies through the creation of an electromagnetic field whose frequency corresponds to (coincides with) the examined body's internal or external resonance frequency, c h a r a c t e r i s e d in that the electric and magnetic components of the field are created separately from one another with the help of two different systems, whereby the angle between the electric and magnetic vectors of the electromagnetic field is changed smoothly within a set range (in this particular case within the range of from zero to 360 degrees), whereby the waves reflected from the examined body are picked up with the help of a specially designed receiver system, the signal at the output of the receiver system being constantly recorded and the parameters characteristic of the examined body (object) being fed into the data bank of the system radiating the electromagnetic field, as the reflected signal is picked up.

2. A method according to Claim 1, c h a r a c t e r i s e d in that a body whose content is unknown, but with at least one known component, is placed in the electromagnetic field of the radiating system; the parameters characteristic of the examined body and those corresponding to the electromagnetic field of the radiating system recorded as soon as the system picks up at least one reflected signal are compared to the already measured parameters of known materials to establish the body's material components.

3. A method according to Claim 1, c h a r a c t e r i s e d in that a body whose condition (state) is unknown is placed in the electromagnetic field of the radiating system; the parameters characteristic of the examined material and those corresponding to the electromagnetic field of the radiating system are compared to the already measured parameters of known materials to determine the composition of the examined object (body).

4. A method for producing an effect on (treatment of) living organisms and nonliving bodies, whereby an electromagnetic field is created, whose frequency coincides with the internal and external resonance frequencies of the body, which is characterised in that the said body is located at a distance of 30 or more kilometres from the system radiating the field, and in that the angle between the electric and magnetic components of the electromagnetic field is equal to the body's characteristic vectorial angle.

5. A method according to any of the preceding Claims 1 - 4, characterised in that the electric and magnetic vectorial components are generated with the help of electric and magnetic radiators, where the supertoroidal aerials of the first or higher, but invariably odd, order are electric radiators and the supertoroidal aerials of the second or higher, but invariably even, order are magnetic radiators.

6. A method according to Claim 5, characterised in that the electromagnetic field is created by two periodic signals being within the band of from one kilocycle to 1000 gigacycles per second and being modulated by a low frequency signal within the band of from 0.001 to 100 cycles per second.

7. A method according to Claim 6, characterised in that both periodic signals are sinusoidal.

8. A method according to Claim 6 and Claim 7, characterised in that the angle between the electric and magnetic vectors of the field is set by changing the difference in the phase of the modulated signals fed into each aerial.

9. A method according to Claim 8, characterised in that the low frequency sinusoidal signal which modulates the high frequency signal creating the electromagnetic field is broken off after a certain part of the wave has passed and

formed a definite phase angle.

10. A method according to Claim 9, characterised in that to produce a stimulating effect the low frequency sinusoidal signal should be dampened (eliminated) as soon as it forms a phase angle of 0.33*T.

11. A method according to Claim 9, characterised in that to produce an inhibiting effect the low frequency sinusoidal signal should be dampened (eliminated) as soon as it forms a phase angle of 0.25 *T.

12. A method according to any of the preceding Claims 1 - 11, characterised in that if the examined object is of microscopic magnitude and if its effective field angle is unknown, the angle between the electric and magnetic vectors of the electromagnetic field induced by the electromagnetic radiating system is changed in stages; in the course of the change the frequency of the signal generating the electromagnetic field is constantly identical to the examined object's internal frequency; every time it changes a series of measurements are made with the help of a low frequency signal which is dampened (eliminated) as soon as one phase angle is equal to 0.25 *T and the other phase angle is equal to 0.33 *T; the magnitude of the vectorial angle is considered to be characteristic of the examined object, if the reflected feedback signal is the greatest, when the parameters of the field of the said object coincide with those of the field created by the radiating generators.

13. A method according to any of the preceding Claims 4 - 11, characterised in that the examined object is located at a distance of 30 or more kilometres from the system radiating the field, imprints (copies) of the electromagnetic fields characteristic of the given object and its geographic location (ground) are placed between the turns creating (inducing) an auxiliary electromagnetic field parallel to the

(Earth's) geomagnetic field, the auxiliary electromagnetic field parallel to the geomagnetic field being "superimposed" on the electromagnetic field of the examined object, where the angle between the electric and magnetic vectors of the conditioning (operant) field should be equal to the characteristic vectorial angle of the examined object or the vectorial angle of the material acting on the object.

14. A device for measuring the electromagnetic field radiated by living organisms and nonliving bodies, comprising a transmitter system, which creates an electromagnetic and which is controlled by a signal modulated by two periodic signals, and a receiver system which picks up waves reflected by the examined body, c h a r a c t e r i s e d in that two different radiating systems are used separately to create the electric and magnetic components of the field, where the transmitter system comprises transmitting aerials and control circuits connected thereto and where the receiver system comprises receiving aerials, an amplifier connected thereto, and a recording unit connected to the amplifier output; then a systems control unit is connected to the receiver system and the transmitter system, the transmitter system comprising at least eight aerials or a number thereof which is a multiple of four and the receiver system comprising at least four aerials or a number thereof which is a multiple of four, the number of aerials of the receiver system and that of the transmitter system forming a ratio of at least one to two.

15. A device acting upon living organisms and nonliving bodies with the help of a magnetic field, comprising a transmitter system which creates an electromagnetic field and which is controlled by a signal modulated by two periodic signals, c h a r a c t e r i s e d in that it uses two different radiating systems separately producing the electric and magnetic components of the field, where the transmitter system comprises transmitting aerials and control circuits connected to the transmitter system, the transmitter system comprising

at least two, aerials or a number thereof which is invariably a multiple of two.

16. A device according to Claims 14 or 15, c h a r a c t e r i s e d in that the aerials used are supertoroids of the first or higher, but invariably odd, order, and the magnetic field radiators (aerials) are supertoroids of the second or higher, but invariably even, order.

17.A device according to Claim 16, c h a r a c t e r i s e d in that the aerials are arranged on the vertices of squares, the aerials arranged opposite one another being supertoroidal aerials radiating only an electric or only a magnetic field, whereas those arranged side by side being supertoroidal aerials differing from the former in that they radiate either an electric or a magnetic field.

18. A device according to any of the preceding Claims 4 - 17, c h a r a c t e r i s e d in that a high frequency signal generator is connected to each aerial of the transmitter system, where the high frequency signal generator output is connected to the input of the modulated signal modulator and the output of the low frequency signal generator is connected to the input of the modulated signal modulator, and the output of the modulator is connected through a pulse chopper to the appropriate transmitting aerial.

19. A device according to Claim 13, c h a r a c t e r i s e d in that twinned low and high frequency aerials connected to separate aerials are connected to a frequency synchroniser and phase adjustment means - an effective phase shifter - and also in that the generators and the input of the phase adjustment means - an effective phase shifter - is connected to the output of the central control unit, a control computer.

20. A device according to any of the preceding Claims 14 - 19, c h a r a c t e r i s e d in that to produce an effect on objects (bodies) located at a distance of 30 or more kilometres an accessory aerial comprising a supertoroid (L3) of the second order is placed close to the system radiating the operant field, a Helmholtz coil (L1), which is coupled to the adjustable secondary side of a mains-operated transformer, is connected in parallel to the turns of the supertoroidal aerial, another Helmholtz coil (L2) which is linked in parallel to a condenser (C), is coupled to the first Helmholtz coil (L1) by means of mutual inductance, the control circuit comprising two high and low frequency generators is connected to this oscillatory circuit which in turn is connected to the generator of the modulator.

21. A device according to Claim 20, c h a r a c t e r i s e d in that both Helmholtz coils (L1 and L2) are arranged close to one another on the same axis, the axis being parallel to the (Earth's) geomagnetic lines, in that imprints (copies) of the electromagnetic fields characteristic of the said object and its geographic location (ground) are placed between the coils inducing an auxiliary electromagnetic field parallel to the geomagnetic field.

22. A device according to Claim 21, c h a r a c t e r i s e d in that the imprints (copies) of the electric fields characteristic of the geographic location (ground) and the exposed object (body) are transferred in frozen form in glycerine, paraffin, tar or mixtures thereof.

23. A device according to Claim 22, c h a r a c t e r i s e d in that if paraffin is used there should 10 units of mass of paraffin to one unit of mass of metal powder (whose composition is given in units of mass):
one unit of mass of silver,
two units of mass of copper,
three units of mass of iron,

four units of mass of aluminium, and
four-nine units of mass of tin.

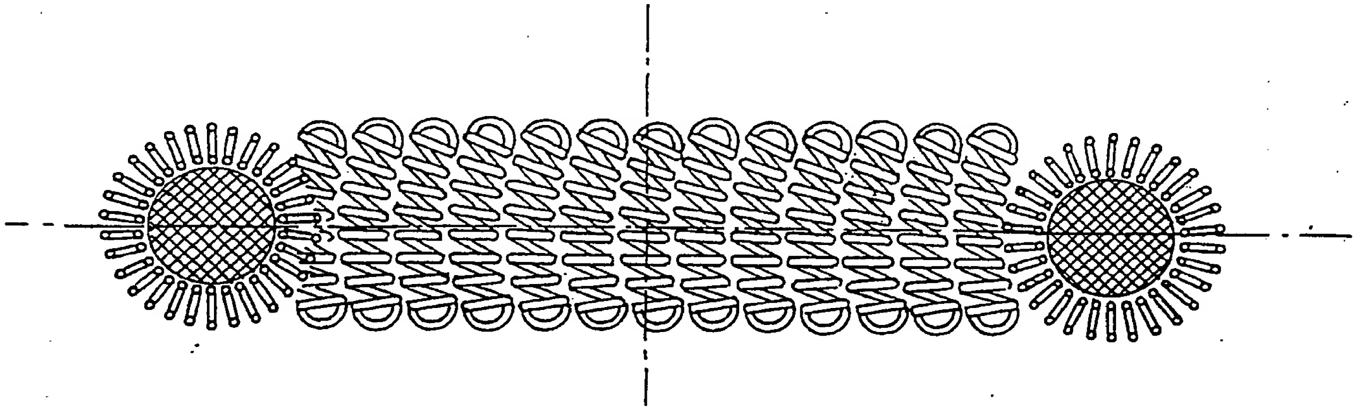


FIG. 1a

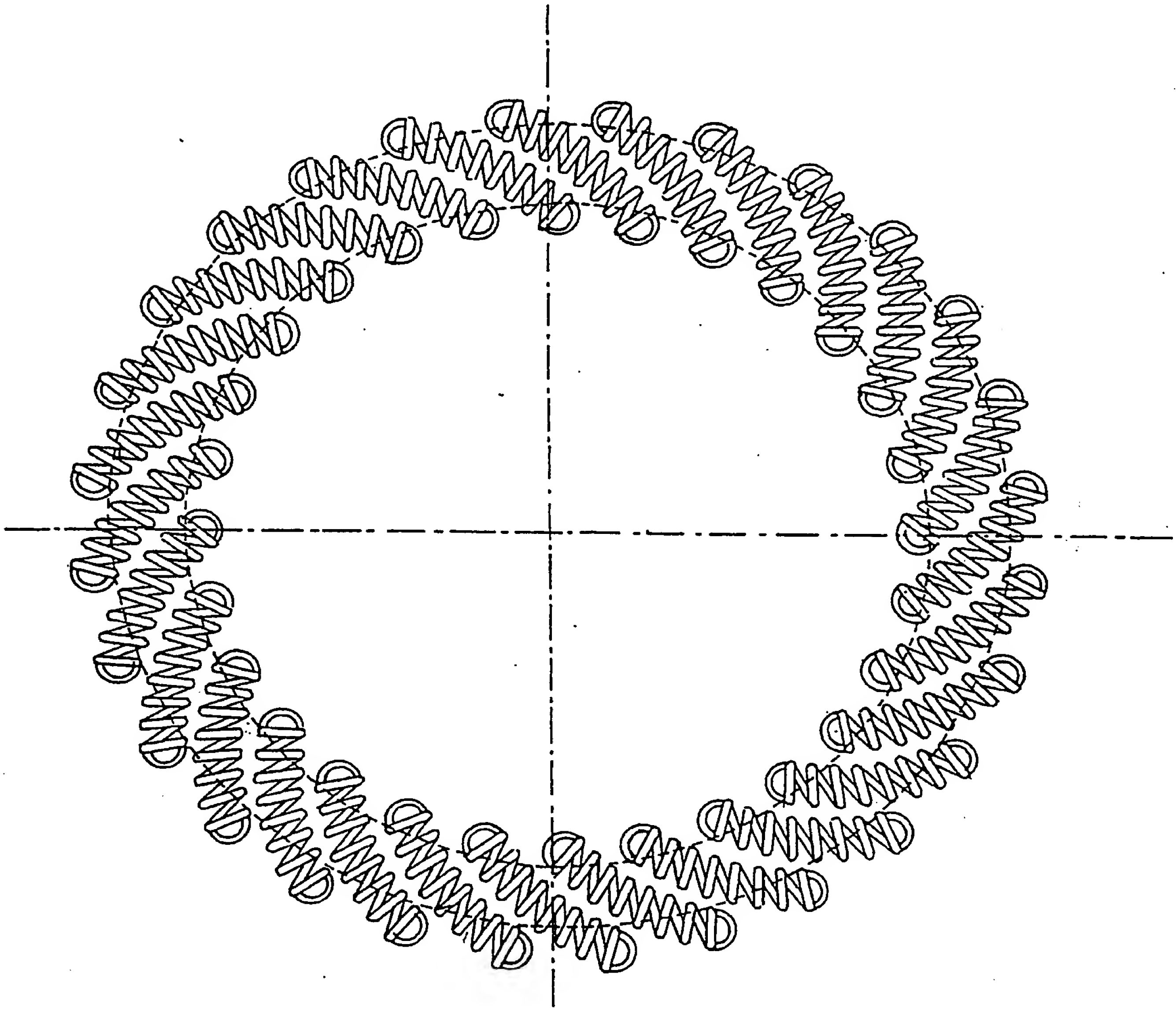


FIG. 1b

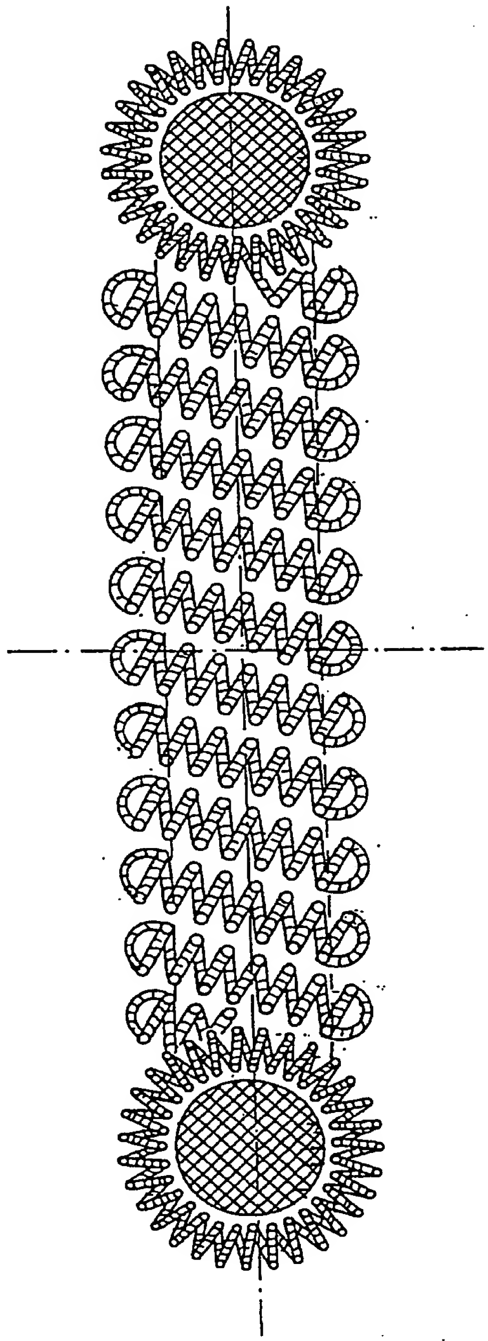


FIG. 1c

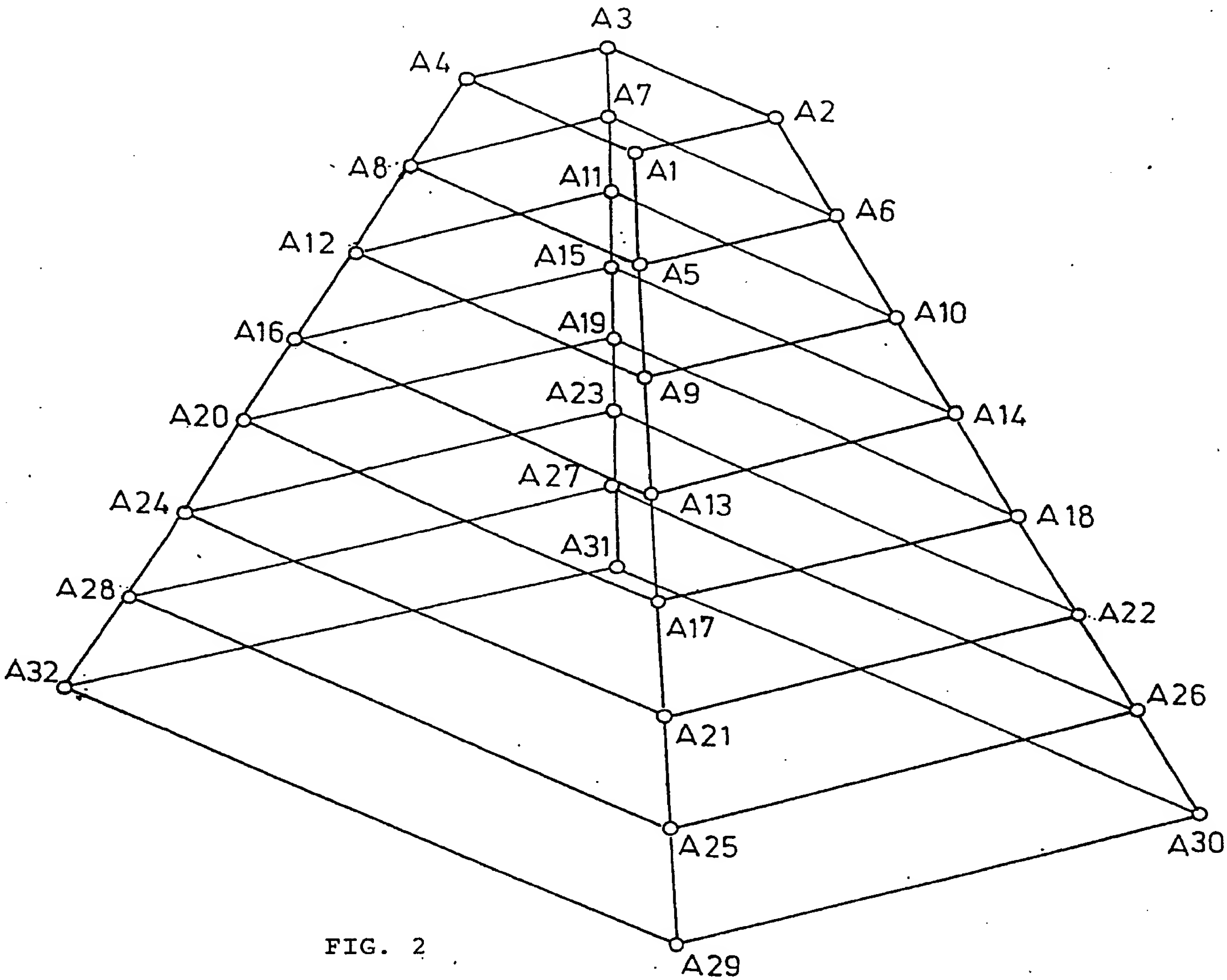

A3
A4
A7
A2
A8
A11
A1
A6
A12
A15
A5
A10
A16
A19
A9
A14
A20
A23
A27
A13
A18
A24
A31
A28
A17
A22
A32
A21
A26
A25
A30
A29

FIG. 2

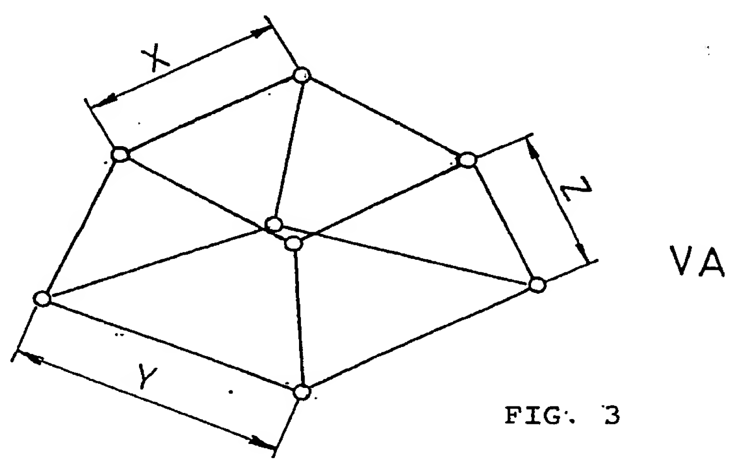

X
Z
Y
VA

FIG. 3

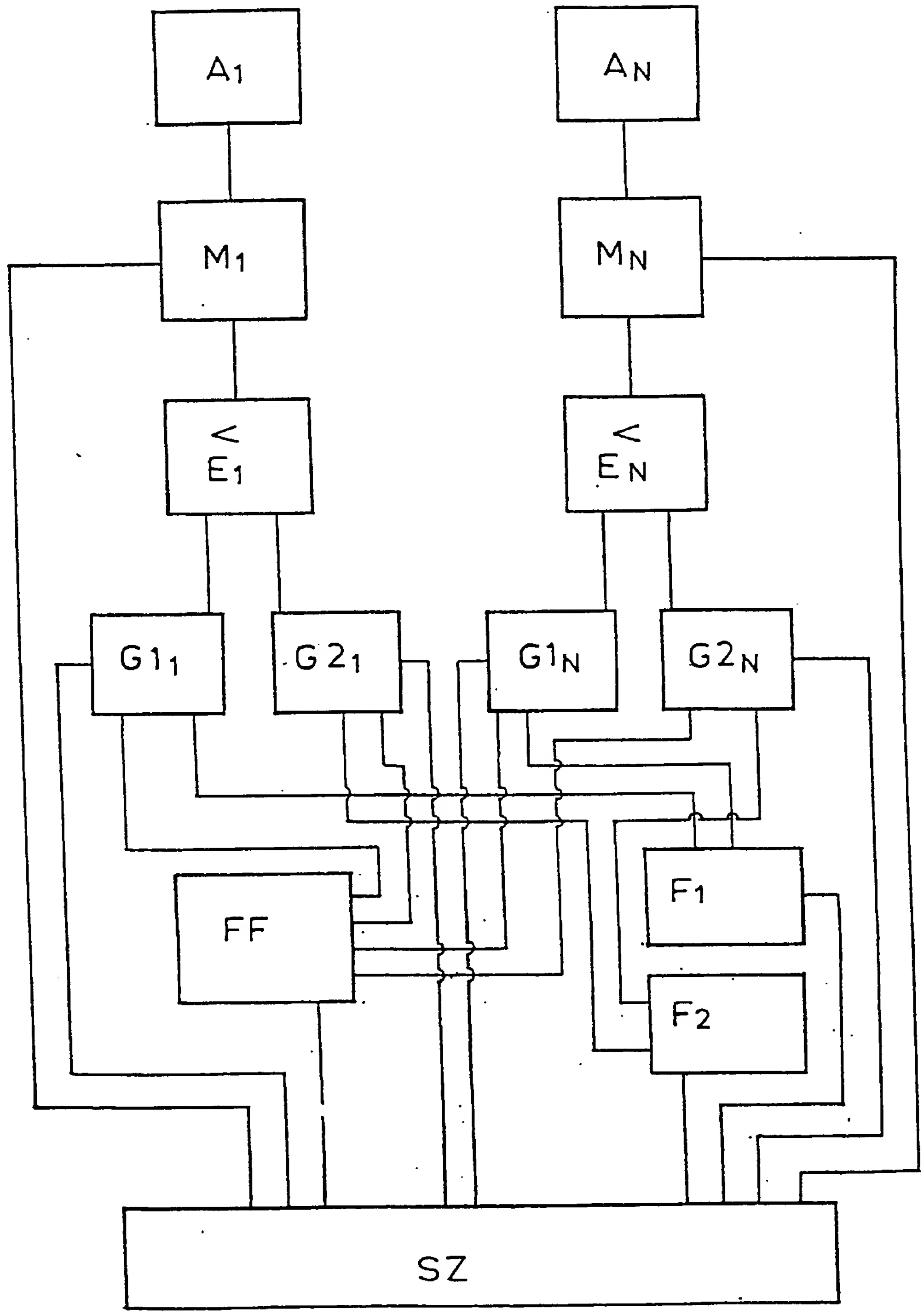


FIG. 4

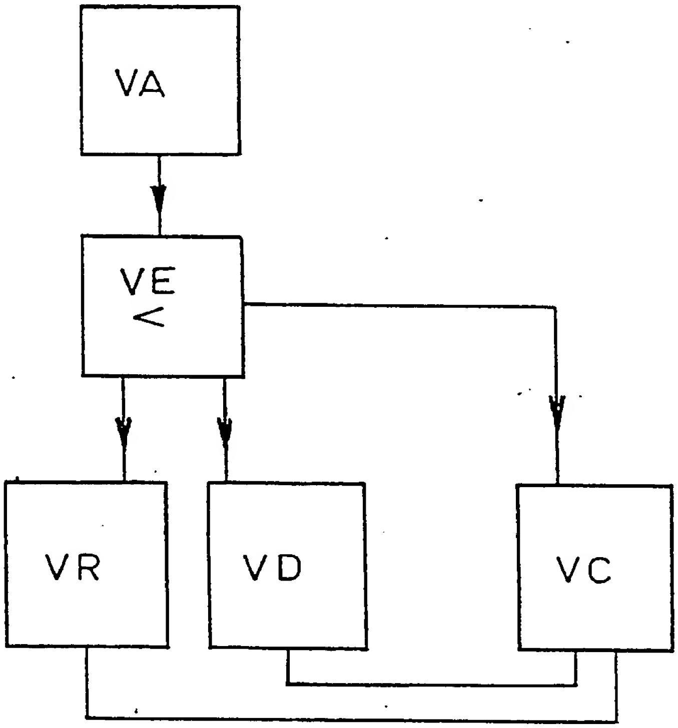


FIG. 5

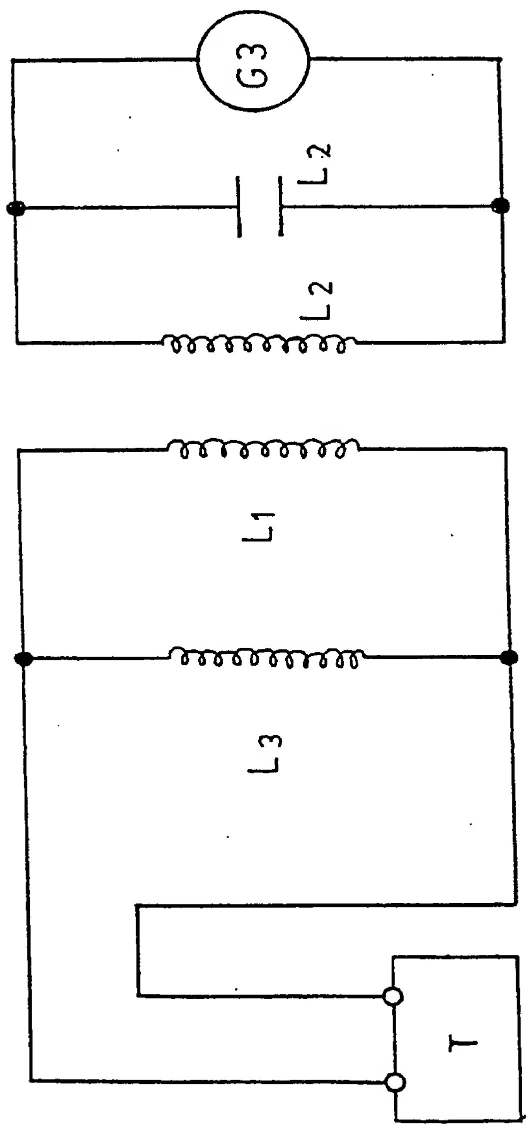


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/HU 93/00043

A. CLASSIFICATION OF SUBJECT MATTER

IPC^5: A 61 N 1/40, 2/04, 5/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A 61 N 1/40, 2/04, 5/02, 5/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

QUESTEL, WPIL, (ELECTRIC, MAGNETIC, FIELD, VECTOR, ANGLE, RESONANCE W FREQUENCY)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Richard Dorf, Electrical Engineering Handbook, 1993, cRc Press, USA, 2000 corporate Blvd.N.W., Boca Raton, Florida 33 431; chapter 35, pages 837-860; especially pages 838-840.	1,4,8,12,14
A	EP, A1, 0 500 983 (MEDILINE) 02 September 1992 (02.09.92), column 3, lines 11-23; column 4, line 31 to column 5, line 27; column 8, lines 49-56; claim 1.	1,4,6,15
A	AT, B, E 20 313 (THERAFIELD) 25 August 1982 (25.08.82) page 3, last paragraph; claims 1,2.	1,12

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 March 1994 (21.03.94)	28 April 1994 (28.04.94)

Name and mailing address of the ISA/ AT	Authorized officer
AUSTRIAN PATENT OFFICE Kohlmarkt 8-10 A-1014 Vienna Facsimile No. 1/53424/535	Zawodsky e.h. Telephone No. 1/53424/346

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/HU 93/00043

Im Recherchenbericht angeführtes Patentdokument Patent document cited in search report Document de brevet cité dans le rapport de recherche	Datum der Veröffentlichung Publication date Date de publication	Mitglied(er) der Patentfamilie Patent family member(s) Membre(s) de la famille de brevets	Datum der Veröffentlichung Publication date Date de publication
EP A1 500983	02-09-92	ZA A 9201228	28-10-92
EP A1 58564	25-08-82	AT E 20313 DE CO 3271605 EP B1 58564	15-06-86 17-07-86 11-06-86